

Adaptation Adventure

Adapted from: Microtrek Treasure Hunt, Project Wild K-12 Activity Guide, Project WILD, p. 82-85.

Grade Level: Basic to Advanced, depending on the extensions and modifications used

Duration: 30 minutes to 2 hours

Setting: Outside- schoolyard, community, or field site

Summary: This is a scavenger hunt to find signs of wildlife adaptations to humans.

Objectives:

- To gain an understanding of human and wildlife interactions
- To learn about wildlife adaptations to different environments
- To teach students to look at small details and think critically about their surroundings

Vocabulary: riparian zone, scat, beaver chews, muskrat midden, tree rubs

Related Module Resources:

- Other Beaver activities

Materials (Included in Module):

- Scavenger Hunt Lists
- Field Guides
- Animal Track Examples

Additional Materials (NOT Included in Module):

- Digital or Polaroid camera (optional)

ACADEMIC STANDARDS:

7th Grade

- 4.1.7.C.- Explain how the physical components of aquatic systems influence the organisms that live there in terms of size, shape and physical adaptations.
4.3.7.C- Explain the complex, interactive relationships among members of an ecosystem.

10th Grade

- 4.1.10.E- Identify the effects of humans and human events on watersheds
4.2.10.C- Analyze how man-made systems have impacted the management and distribution of natural resources.

12th Grade

- 4.1.12.E- Evaluate the effects of human activities on watersheds and wetlands.

BACKGROUND:

Interactions between humans and the environment include encounters between humans and wildlife. It is not only humans that alter the environment or leave behind evidence of their presence; within the **riparian zone**, or area adjacent to the creek, many animals will leave behind clues about themselves. Signs that animals may leave behind include: tracks, **scat** (feces), **tree rubs**, feathers, hair, shells, bones or skulls, and nests. Some species will leave behind specific signs, such as a **beaver chew** or a **muskrat midden**. A beaver chew is the remains of a tree or log that has teeth marks that show a beaver has either cut the tree down or cut it into smaller pieces. A muskrat midden is a pile of shells left behind by a muskrat. These piles often include the shells of freshwater mussels. At other times, animals or carcasses may be discovered.

Often these indicators can reveal something about the life of the organism or the quality of the habitat. Scat can be studied to determine what type of diet an organism has. There may be pieces of vegetation, bones, or fur stuck in the feces. Muskrat middens are not only indicators of a muskrat population, but also reveal what types of mussels are found in a waterway and what types of mussels muskrats prefer to eat.

Tree rubs are often used by male whitetail deer in the fall to mark their territory. They use their antlers to scrape bark off trees so that other male deer will know that this territory is claimed.

Tracks left behind by animals can reveal how they were traveling or what they might have been doing at a specific site. Often, an experienced tracker can determine whether an animal was walking, running, stalking prey, or standing still in a particular location based on the type of imprint left behind. In the moist soil or sand along shorelines tracks can often be found clearly imprinted. Fur or feathers left behind by animals may also tell a similar story, based on its color, the quantity left behind and how it was left.

Humans and animals have adapted to co-exist in many situations; those that cannot adapt or are unable to adapt may be killed or driven to extinction. Signs of this co-habitation can be found in your backyard, schoolyard or community. Marie Winn's book, Red-Tails In Love, tells the story of a pair of red-tail hawks that nested on an apartment building in New York City. While you may not be able to find such an unusual set of circumstances, many other animal adaptations should be easily found in your backyard or community.

OVERVIEW:

Students will explore their schoolyard, field site or community for signs of animal adaptations to humans and other evidence of wildlife presence in the area.

PROCEDURE:

1. Divide students into pairs or small groups, based on teacher preference.
2. Give each pair or group a scavenger hunt list paper bag, paper, and a pencil. Each pair or group should be assigned a specific item to find or be instructed to find as many items off the list as possible. This is dependent upon time constraints and should be determined based on the discretion of the teacher.
3. Send the students to retrieve an item(s) that reflect the description(s) on the card. Alternatively, depending on the nature of the item, it may be more practical for students to sketch a picture of the item or scene and write a vivid description of the item. **NOTE:** Nothing should be taken that will harm or injure an animal or its home. For example, no nests or eggs should be touched or taken. Also, no live animals or carcasses should be touched. This should be explained to the students before they leave the classroom.
4. When students return to the classroom have each pair or group present their findings to the class. They should be able to describe the item they found, explain what it indicates and how it fulfills the description on the card.
5. Allow and encourage the students to ask questions of each other and engage in a discussion about animals and their adaptations to humans.

DISCUSSION:

What items and adaptations were surprising? Was there anything that you did not expect to see or would not have expected to find? What adaptations and evidence did you expect to find?

What types of animals have left the most evidence of their co-habitation of areas with humans? Which animals left the least evidence? Why do you think this might be?

What types of problems are caused for wildlife because of human presence? What benefits of human presence are there to wildlife?

Do you think it is a good thing that wildlife are able to adapt to human environments and human communities? Why or why not? What adaptations may be bad for humans?

EVALUATION:

- Have the students turn in a list of the items or scenes they encountered.
- Did the student actively participate in the discussion?
- Have the students write a narrative essay describing what they have found and what they learned from their discovery
- Have each student do research on one of the adaptations they found and give a report to the class

EXTENSIONS AND MODIFICATIONS:

- Give each group a Polaroid or digital camera to take pictures of the scenes they discover rather than having them sketch their findings
- Put together a website of findings with the pictures the students took
- Have the students give an informative presentation to teach younger students about interactions between humans and wildlife
- Take a trip to a healthy riparian buffer or forest and to a more highly populated area, compare and contrast the different types of adaptations and interactions animals have with humans and their environment
- Have each student look around his/her backyard or neighborhood to see what other adaptations they find there
- Ask students to research what adaptations humans have to living with animals and to share their findings with the class (i.e. sleeping under mosquito nets)
- If you have an older class, read Marie Winn's Red Tails In Love
- Look up more information on wildlife in urban areas on the web, to get you started: <http://www.pbs.org/wnet/nature/wildside/concrete.html>

NOTES (PLEASE WRITE ANY SUGGESTIONS YOU HAVE FOR TEACHERS USING THIS ACTIVITY IN THE FUTURE):